REMARKS

In response to the Office Action mailed March 21, 2007, Applicant respectfully requests reconsideration. Claims 1-8 were previously pending in this application. By this amendment, claims 1, 2 and 4-8 have been amended. New claims 9-17 have been added. As a result, claims 1-17 are pending for examination with claims 1, 7 and 8 being independent. No new matter has been added.

Information Disclosure Statement

The Office Action alleged that cite numbers 15-17 in the Information Disclosure Statement (IDS) failed to comply with 37 C.F.R. 198(a)(3) because they do not include a concise explanation of the relevance. Applicant respectfully notes that the IDS filed April 14, 2005, complies with MPEP § 609.04(a) which states the following: "[w]here the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office. This may be an explanation of which portion of the reference is particularly relevant, to which claims it applies, or merely an "X", "Y", or "A" indication on a search report."

On page 3 of the IDS April 14, 2005, Applicant stated that "the examiner's attention is drawn to the enclosed International Search Report, wherein all of the cited documents have been placed in category "A", meaning that, in the opinion of the International Searching Authority, they relate to the general technological field of the invention."

Accordingly, withdrawal of this objection is respectfully requested.

Objections to the Specification

The Office Action objected to the disclosure because it contained an embedded hyperlink. Applicant has amended the specification to delete the embedded hyperlink.

Accordingly, withdrawal of this objection is respectfully requested.

Objections to the Claims

The Office Action objected to claims 1, 4, 5 and 8 as containing informalities. Applicant has amended claims 1, 4, 5 and 8 to address the Examiner's concerns.

Accordingly, withdrawal of this objection is respectfully requested.

The Office Action also objected to claim 7 under 37 CFR 1.75(c). Applicant has rewritten claim 7 in an independent form to address the Examiner's concerns.

Accordingly, withdrawal of this objection is respectfully requested.

Double Patenting Rejection

The Office Action provisionally rejected claims 1-3 and 6-8 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claim 1 of a co-pending application No. 10/535,064, now U.S. Patent No. 7,225,098 issued May 29, 2007 in view of Trauben, U.S. Patent No. 5,594,864. Applicant herein submits a Terminal Disclaimer.

Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §103

The Office Action rejected claims 1, 3 and 5-8 under 35 U.S.C. §103(a) as being unpatentable over Yamashita, U.S. Patent No. 6,467,083 ("Yamashita"), in view of Trauben, U.S. Patent No. 5,594,864 ("Trauben"). Applicant respectfully disagrees.

Claim 1, as amended, recites:

> A monitoring device integrated on a chip of a microprocessor executing a sequence of instructions, comprising:
>
> a message calculation means for, on each execution of an instruction from among a plurality of instructions of predetermined types, *generating a digital message corresponding to a type of the executed instruction*;
>
> a buffer memory for storing each generated message; and
>
> *a plurality of output terminals connected to an external analysis tool, each output terminal being associated with one of the instruction types and the message calculation means modifying a state of the output terminal associated with an instruction type when a message corresponding to said instruction type is stored in the buffer memory so that the external analysis tool stores a time when the state of the output terminal is modified.*
>
> (Emphasis added).

Yamashita is directed to providing a debugging system which economically accumulates pieces of trace data information in a real time fashion without any malfunction of a target system (Yamashita, col. 5, lines 22-24). The debugging system largely comprises a main memory 11, a one-chip information processor 12 and an emulator 13. (Yamashita, col. 7, lines 13-16). The one-chip information processor 12 includes a register group 14, a central processing unit 15, a tracer 16 and a trace buffer 17. (Yamashita, col. 7, lines 26-28). The tracer 16 includes a data selector 21, a trace packet generator 22, a trace buffer controller 23 ... . (Yamashita, col. 8, lines 4-5). The trace packet generator 22 generates seven kinds of parallel trace packets TP, i.e., two kinds of 8-bit trace packet, a 16-bit trace packet, a 48-bit trace packet, two kinds of 56-bit trace packet and an 88-bit trace packet. The trace packets TP are supplied from the trace packet generator 22 to the trace buffer controller 23. (Yamashita, col. 8, lines 21-26).

On pages 9-10, the Office Action concedes that Yamashita does not disclose "a plurality of output terminals ...," as recited in claim 1. The Office Action then alleges that Trauben discloses this limitation of claim 1.

Trauben is directed to monitoring processor states and characterizing bottlenecks in an arbitrary customer workload (Trauben, Abstract). In the preferred embodiment of Trauben, ten additional datalines transmitting PIPE signals are routed from the integer and floating point datapaths to external contact pins on a pin gate array supporting the CPU. The ten pipe signals provide information on **activity of key internal states for instructions** at the execution stage of the pipelined processor. (Trauben, col. 2, lines 59-64). (Emphasis added). Therefore, Trauben does not teach or suggest "a plurality of output terminals connected to an external analysis tool, each output terminal being associated with one of the instruction types and the message calculation means modifying a state of the output terminal associated with an instruction type when a message corresponding to said instruction type is stored in the buffer memory so that the external analysis tool stores a time when the state of the output terminal is modified," as recited in claim 1.

In view of the above, claim 1 patentably distinguishes over Yamashita and Trauben, either alone or in combination.

Claims 2-6 depend from claim 1 and are allowable for at least the same reasons.

Accordingly, withdrawal of the rejection of claims 1-6 is respectfully requested.

Claim 7, as amended, recites:

An integrated circuit comprising:

a microprocessor for executing a sequence instructions; and

a monitoring device for monitoring the execution of the sequence of instructions, the monitoring device comprising:

a message calculation means for generating digital messages, wherein *each digital message corresponds to a predetermined type of an instruction from a plurality of predetermined instruction types, and wherein the digital message is generated on each execution of the instruction of the predetermined type*,

a buffer memory for storing the generated digital messages; and

a plurality of output terminals connected to an external analysis tool, wherein an output terminal from the plurality of output terminals is associated with an instruction type and the message calculation means modifying a state of the output terminal when a digital message corresponding to the instruction type is stored in the buffer memory so that the external analysis tool stores a time when the state of the output terminal was modified.

(Emphasis added).

As discussed above, neither Yamashita nor Trauben teach or suggest all limitations of claim 7. Specifically, neither Yamashita nor Trauben teach or suggest "a plurality of output terminals connected to an external analysis tool, wherein an output terminal from the plurality of output terminals is associated with an instruction type and the message calculation means modifying a state of the output terminal when a digital message corresponding to the instruction type is stored in the buffer memory so that the external analysis tool stores a time when the state of the output terminal was modified," as recited in claim 7.

In view of the above, claim 7 patentably distinguishes over Yamashita and Trauben, either alone or in combination.

Accordingly, withdrawal of the rejection of claim 7 is respectfully requested.

Claim 8, as amended, recites:

A method for monitoring a microprocessor executing a sequence of instructions by means of a device integrated to a microprocessor chip, the method comprising:

on each execution of an instruction from the sequence of instructions, generating a digital message corresponding to a type of the executed instruction; and

storing each generated digital message in a buffer memory; and

modifying a state of one of a plurality of output terminals connected to an external analysis tool and each associated with an instruction type when a digital message corresponding to the instruction type to which said output terminal is associated is stored in the buffer memory.

(Emphasis added).

As discussed above, neither Yamashita nor Trauben teach or suggest all limitations of claim 8. Specifically, neither Yamashita nor Trauben teach or suggest "modifying a state of one of a plurality of output terminals connected to an external analysis tool and each associated with an instruction type when a digital message corresponding to the instruction type to which said output terminal is associated is stored in the buffer memory," as recited in claim 8.

In view of the above, claim 8 patentably distinguishes over Yamashita and Trauben, either alone or in combination.

Accordingly, withdrawal of the rejection of claim 8 is respectfully requested.

New Claims

Claims 9-17 have been added herein to more clearly define Applicant's contribution to the art.

Claim 9 depends from claim 8 and is therefore allowable for at least the same reasons as claim 8.

Claims 10-17 depend from claim 7 and are therefore allowable for at least the same reasons as claim 7.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Dated: September 21, 2007

Respectfully submitted,

By: _____

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